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REMARKS

Claims 21, 30, and 41-43 have been amended to more clearly define Applicant's invention. In particular, each of these claims has been amended to recite that the organic group comprises at least one anionic group. Claims 24 and 37 have been cancelled in view of this amendment. Also, claims 29 and 40 have been amended to be consistent with claims 21 and 30 respectively. Furthermore, new claim 44 has been added, relating to a specific embodiment of the pigment composition of the present invention, reciting that the pigment composition is in a dry form. Support for this new claim can be found, for example, in paragraphs [0021] and [0034], as well as Example 2. No new matter has been added. Thus, claims 21, 25-34, and 38-44 are pending.

Rejection of Claims under 35 U.S.C. § 112

Claims 42 and 43 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In particular, in paragraph 3 of the Office Action, the Examiner states that the amount of water in the non-aqueous solvent is without basis and asks whether it is based on total weight or volume of the non-aqueous solvent.

Applicant believes that, in view of the disclosure as a whole, one skilled in the art would understand that the amount of water in the non-aqueous solvent of the recited non-aqueous coating composition is 0-20% by weight (see, for example, paragraph [0018] and, especially, paragraph [0040] relating to the amount of pigment in the non-aqueous coating composition).

Therefore, Applicant believes claims 42 and 43 are not indefinite and respectfully requests that this rejection be withdrawn.

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Rejection of Claims under 35 U.S.C. § 103

Adams et al.

Claims 21, 27-34, and 40-43 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Adams et al. (U.S. Patent No. 5,698,016).

In paragraph 4 of the Office Action, the Examiner states that Adams et al. discloses compositions of modified carbon products, wherein a modified carbon product is functionalized with an organic group that is preferably an ionic group, an ionizable group, or a mixture thereof, and associates with an anionic amphiphilic ion such as sodium bis-(2-ethylhexyl)sulfosuccinate and a homo-or copolymer of acrylic acid or methacrylic acid or salts thereof (wherein the use of ammonium salts is common) in the most preferred of mediums, water. The Examiner further states that the modified carbon product composition is incorporated into various formulations such as inks and coatings, and, in particular, non-aqueous coating compositions including acrylic, urethane, and epoxy resins and solvents such as aromatic hydrocarbons.

The Examiner notes that Adams et al. does not exemplify or explicitly disclose the use of two anionic amphiphilic ions. However, the Examiner states that it is considered to have been well within the capabilities of one of ordinary skill in the art to use two ingredients which are known to impart the same effect, given that Adams et al. teaches each one, absent a showing of unexpected and surprising results for the combination.

Regarding Applicant's arguments filed 7/9/2007, the Examiner states that these have been fully considered but are not persuasive. In particular, regarding Applicant's arguments that Adams et al. does not disclose a combination of polyacrylic acid and anionic surfactant, the Examiner states that it is considered to have been well within the capabilities of one of ordinary skill in the art to use two ingredients which are known to impart the same effect, absent evidence to the contrary. Also, regarding Applicant's argument that Adams et al. fails to disclose the use of both anionic surfactants and anionic-modified carbon black, the Examiner agrees and has therefore withdrawn rejections of claims which recite anionic-modified carbon

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black over Adams et al. alone.

While Applicant continues to respectfully disagree with the rejection of claims 21, 27-34, and 40-43 in view of Adams et al., in order to more clearly define Applicant's invention, as well as to advance the prosecution of the present application, claims 21, 30, and 41-43 have been amended to recite that the organic group comprises at least one anionic group, as was recited in claims 24 and 37 (now cancelled in view of this amendment). Since the Examiner agrees that claims 24 and 37 are patentable in view of Adams et al., which does not disclose the use of both anionic surfactants and anionic-modified carbon black, then amended claims 21, 30, and 41-43 should therefore also be patentable over this reference. Furthermore, claims 27-29, which depend directly or indirectly from claim 21, and claims 31-34 and 40, which depend directly from claim 30, recite further embodiments of the present invention, and, for at least the reasons discussed above, are also patentable over Adams et al.

Applicant therefore believes that claims 21, 27-34, and 40-43 are patentable over Adams et al. and respectfully requests that this rejection be withdrawn.

Regarding new claim 44, this claim depends directly from claim 21, reciting a specific embodiment of the present invention. Since Applicant believes that claim 21 is patentable over Adams et al., then claim 44 should also be patentable over this reference.

Nyssen

Claims 21, 24-28, 30-34, 37, 38, 40, and 41 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Nyssen (WO 00/60015). The U.S. equivalent of this German language reference (U.S. Patent No. 6,818,050) is referred to in the discussions below.

In paragraph 5 of the Office Action, the Examiner states that Nyssen discloses paint and coating material systems comprising a dispersant such as an anionic dispersant (including sulfosuccinic esters, alkylbenzenesulfonates, and salts of polyacrylic acids and of copolymers of acrylic acid and methacrylate), a pigment such as a surface-modified carbon black (including sulpho- or carboxyl-containing carbon blacks), a binder (including polyesters, alkyd resins,

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acrylic resins, and epoxy resins), water, and solvent (such as aliphatic or aromatic hydrocarbons, glycol and polyglycol ethers, esters, and ketones).

The Examiner notes that, while Nyssen does not explicitly disclose the combined use of anionic surfactants such as a salt of a sulfonate group and a polymer comprising at least one salt of a carboxylic acid group, it would have been obvious to one of ordinary skill in the art to utilize two ingredients which are known to produce the same effect.

Furthermore, the Examiner also notes that, while Applicant's claims are drawn to a non-aqueous coating composition and Nyssen is drawn to an aqueous composition, Applicant's specification states that the claimed non-aqueous solvent may include 0-20% water and Nyssen discloses the use of up to 55 wt% solvent. The Examiner therefore concludes that, given that there is no amount limitations regarding water in the presently cited claims, and further given that Nyssen teaches the presence of solvent other than water, Nyssen is pertinent and relevant prior art.

Applicant respectfully disagree with the rejection of claims 21, 24-28, 30-34, 37, 38, 40, and 41 in view of Nyssen. In particular, claims 21, 30, and 41 recite a modified carbon product comprising a carbon product having attached at least one organic group. By comparison, Nyssen relates to paint and coating material systems comprising at least one solids component and at least one binder component. The solids component contains a pigment such as an acidic carbon black or a chemically surface modified carbon black, including a sulfo- or carboxyl-containing carbon black (see column 3, lines 43-47).

However, the pigments of Nyssen are not the modified carbon products used in the pigment composition or non-aqueous coating composition of the present invention. In particular, there is no disclosure, teaching, or suggestion of any attached organic group. Rather, the carbon blacks described in Nyssen are conventional oxidized or sulfonylated carbon blacks. Such blacks would include, for example, several of the carbon blacks shown in the Comparative Examples of the present application, such as M1300 and M1400. Since these are Comparative Examples, the carbon blacks of Nyssen would thus not be considered to be the modified carbon products recited in the present claims.

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Furthermore, the present specification clearly distinguishes oxidized carbon products, such as those of Nyssen, from modified carbon products. In particular, paragraph [0027] describes one embodiment of the present invention in which the pigment composition comprises carbon blacks that have been oxidized. Also, paragraph [0028] describes another embodiment of the present invention in which the pigment composition comprises a modified pigment, preferably a modified carbon product, having attached at least one organic group. Thus, the present specification clearly differentiates the oxidized carbon blacks, such as those described in Nyssen, from modified carbon blacks having attached organic groups.

Since a modified carbon product comprising a carbon product having attached at least one organic group is clearly differentiated from oxidized carbon blacks by the present specification, and since it is carboxyl-containing carbon blacks (i.e., oxidized carbon blacks) and sulpho-containing carbon blacks that are described in Nyssen, Applicants believe that modified carbon products, as the term is used in the present invention, is not taught or suggested by Nyssen. Furthermore, a pigment composition comprising such a modified carbon product, as recited in claim 21, as well as a non-aqueous coating composition comprising such a modified carbon product, as recited in claims 30 and 41, are also not taught or suggested by this reference.

However, in order to more clearly describe Applicant's invention, as well as to advance the prosecution of the present application, Applicant has amended claims 21, 30, and 41 to recite that the modified carbon product comprises a carbon product having attached at least one organic group, and that the organic group comprises at least one anionic group, as was recited in claims 24 and 37 (now cancelled in view of this amendment, making the rejection of these claims over Nyssen moot). Similar amendments have also been made to claims 42 and 43, not included in the rejection in view of Nyssen. Thus, each of the amended claims further distinguishes the recited modified carbon products from oxidized carbon blacks, such as those described in Nyssen. In particular, the modified carbon product has attached an organic group, and this organic group comprises, for example, a carboxyl group or carboxylic acid group. These are therefore not the oxidized or sulpho-containing carbon blacks described in

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Nyssen.

Applicant therefore believes that claims 21, 30, and 41 are patentable over Nyssen. In addition, claims 25-28, which depend either directly or indirectly from claim 21, and claims 31-34, 38, and 40, which depend directly from claim 30, recite further embodiments of the present invention and, for at least the reasons discussed above, are also patentable over this reference. As discussed above, claims 24 and 37 have been cancelled, making the rejection of these claims moot.

Therefore, Applicant believes that claims 21, 24-28, 30-34, 37, 38, 40, and 41 are patentable over Nyssen and respectfully requests that this rejection be withdrawn.

Regarding new claim 44, this claim depends directly from claim 21, reciting a specific embodiment of the present invention. Since Applicant believes that claim 21 is patentable over Nyssen, then claim 44 should also be patentable over this reference. Furthermore, there is no disclosure, teaching, or suggestion of a dry form of a pigment composition in Nyssen, particularly one comprising the recited type of modified carbon product and the recited type of dispersant composition, and one skilled in the art would not be motivated to dry a pigment composition comprising these components, based on the teaching of this reference. By comparison, methods to form such dry pigment compositions are described in the present application (see, for example, paragraph [0034] and Example 2 of the present application). Therefore, Applicant believes that new claim 44 is also patentable over Nyssen.

Nyssen in view of Batdorf

Claim 29 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Nyssen (WO 00/60015) in view of Batdorf (U.S. Patent No. 5,268,203).

In paragraph 6 of the Office Action, the Examiner incorporates the discussion regarding Nyssen from paragraph 5 and further states that, while this reference discloses the use of sulfosuccinic esters as one of the anionic dispersants, it does not explicitly teach the use of an alkylsulfonate group and, in particular, sodium dioctyl sulfosuccinate. For this reason, the Examiner relies on Batdorf et al., stating that this reference teaches that a commercially

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available and well known anionic surfactant/dispersant is sodium dialkyl sulfosuccinate. The Examiner therefore concludes that, given that Nyssen generically teaches the use of sulfosuccinate dispersants and given that a well known and commercially available sulfosuccinate dispersant is sodium dioctyl sulfosuccinate, it would have been obvious to one of ordinary skill in the art to utilize sodium dioctyl sulfosuccinate and thereby arrive at the presently cited claims. Furthermore, the Examiner states that, while Nyssen is silent about the salt associated with the salts of copolymers of acrylic acid, it is well known in the art to commonly utilize alkali metal and ammonium salts and thus would have been well within the capabilities of one of ordinary skill in the art to utilize such a salt as ammonium with the acrylic acid copolymers of Nyssen.

Applicant respectfully disagrees. In particular, claim 29 depends directly from claim 21, and, as discussed in more detail above, Applicant believes that claim 21 is patentable over Nyssen since there is no disclosure, teaching, or suggestion of the recited modified carbon product comprising a carbon product having attached at least one organic group, wherein the organic group comprises at least one anionic group. Therefore, Applicant further believes that claim 29 is also patentable over Nyssen.

Furthermore, Batdorf et al, which has been cited by the Examiner only for its disclosure of sodium dioctyl sulfosuccinate, does not cure the deficiencies of Nyssen. Applicant therefore believes that claim 29 is patentable over Nyssen in view of Batdorf et al. and respectfully requests that the rejection of this claim over this combination of references be withdrawn.

Regarding new claim 44, this claim depends directly from claim 21, reciting a specific embodiment of the present invention. Since this claim has not been rejected over Nyssen in view of Batdorf et al., then claim 44 should also be patentable over this combination of references.

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Nyssen in view of Adams et al.

Claim 39 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Nyssen (WO 00/60015) in view of Adams et al. (U.S. Patent No. 5,698,016).

In paragraph 7 of the Office Action, the Examiner incorporates the discussion regarding Nyssen from paragraph 5 and further states that, while this reference fails to disclose a carbon black with a carboxyphenyl or sulfophenyl group attached to it, Adams et al. discloses compositions of modified carbon products wherein a modified carbon product is functionalized with an organic group that is preferably an ionic group, an ionizable group, or a mixture thereof – preferably sulfophenyl and carboxyphenyl groups. The Examiner also states that Adams et al. further teaches that modified carbon products are advantageous to improve dispersibility. The Examiner therefore concludes that, given that Nyssen discloses the use of functionalized carbon blacks and further given that Adams et al. teaches that carbon black with sulfophenyl or carboxyphenyl groups are advantageous, it would have been obvious to one of ordinary skill in the art to utilize sulfophenyl or carboxyphenyl groups to surface modify the carbon black of Nyssen.

Applicant respectfully disagrees. In particular, claim 39 depends directly from claim 30, and, as discussed in more detail above, Applicant believes that claim 30 is patentable over Nyssen since there is no disclosure, teaching, or suggestion of the recited modified carbon product comprising a carbon product having attached at least one organic group, wherein the organic group comprises at least one anionic group. Therefore, Applicant further believes that claim 39 is also patentable over Nyssen.

Regarding Adams et al., as discussed in more detail above, Applicant believes that claim 30 is also patentable over this reference since this claim has been amended to recite that the organic group comprises at least one anionic group, as was recited in claim 37. Since the Examiner agrees that claim 37 is patentable in view of Adams et al., which does not disclose the use of both anionic surfactants and anionic-modified carbon black, then amended claim 30 should therefore also be patentable over this reference. Thus, Adams et al. cannot cure the deficiencies of Nyssen.

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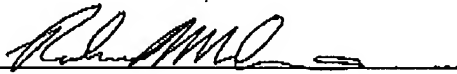
Applicant therefore believes that claim 30 is patentable over Nyssen in view of Adams et al. Since claim 39 depends directly from claim 30, reciting further embodiments of the present invention, claim 39 is therefore also patentable over this combination of references. Applicant therefore respectfully requests that the rejection of this claim over Nyssen in view of Adams et al. be withdrawn.

Conclusion

In view of the foregoing remarks, Applicant believes that this application is in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would further expedite the prosecution of the subject application, the Examiner is invited to call the undersigned.

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